

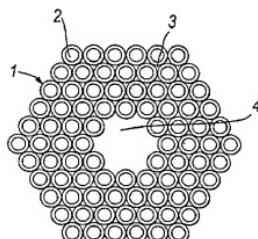
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(54) Title: A PHOTONIC CRYSTAL FIBRE AND A METHOD FOR ITS PRODUCTION



## (57) Abstract

This invention relates to an optical fibre that comprises a core (4) of lower refractive index that is surrounded by a cladding which includes regions of a higher refractive index and is substantially periodic, where the core (4) has a longest transverse dimension that is longer than a single, shortest period of the cladding. In a fibre of this type light is substantially confined to the core area by virtue of the photonic band gap of the cladding material. The invention also relates to a method of manufacturing such an optical fibre, comprising the steps of forming a stack of canes (5), the stack (5) including at least one truncated cane (6) that defines an aperture (7), and then drawing the stack (5) into a fibre having an elongate cavity. The fibre is suitable for high power uses, but is equally suitable for other areas, e.g. optical amplifiers, spectral filters, lasers, gas sensors and telecommunications networks.